The following components have been identified as located within the boundaries of the Water Preserve Areas. The components that have been modified from Alternative D13R are marked with a ' * '. All other components within the Water Preserve Area Alternative 2 SFWMM simulation remain the same as D13R.

* Acme Basin B Discharge (OPE)

* Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge including the Strazzulla Tract (OPE)

* Agricultural Reserve Impoundment - Component VV

* Hillsboro Impoundment - Component M

  Divert WCA 2 flows to Central Lake Belt Storage - Component YY

* Water Conservation Area 3A and 3B Levee Seepage Management - Component O

* Western C-11 Diversion Impoundment and Canal to North Lake Belt Storage Area - Component Q

* C-9 Impoundment - Component R

  Reroute Miami-Dade County Water Supply Deliveries - Component SS

* North Lake Belt Storage Area (NLBSA) - Component XX

  Divert WCA 3 flows to Central Lake Belt Storage Area - Component ZZ

* Central Lake Belt Storage Area (CLBSA) - Component S

  C-4 Structures - Component T

* Bird Drive Recharge Area - Component U

* Dade Broward Levee / Pennsuco Wetlands - Component BB

  Flows to Eastern Water Conservation Area 3B from Central Lake Belt Storage Area - Component EEE

The following components have been identified as located within the boundaries of the Water Preserve Areas. The component descriptions for Alternative 2 have been modified from Alternative 1. These components have been outlined in the component descriptions in a very conceptual way. Some additional level of incidental design has been expended on several of the components in order to allow them to be included in the subregional models.

Acme Basin B Discharge (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Acme Basin B Discharge – SEE WPA COMPONENT MAP 2

Purpose: Improve water quality discharge into WCA 1, attenuate peak flows and route discharge to regional storage impoundments.

Operation: The runoff from Basin B is sent to a 533-acre impoundment and the C-51 Canal through Basin A. A flow of 125 cfs from Basin B is routed north to Basin A via the Acme C-7 canal. Basin A discharges to the C-51 Canal have increased by 125 cfs (equivalent to 1/3" per day runoff for Basin A). The 125-cfs flow to the C-51 Canal also assists in bleed down of the impoundment. The remaining runoff (375 cfs) is directed to the 533-acre impoundment.

Design:

1) Impoundment: approximately 533 acres with a maximum depth of 8 feet located in Section 34. The inflow pump capacity is 375 cfs and is pulling from the Acme C-25 canal when the stage in the canal reaches elevation 14.0 feet NGVD and is turning off when the stage drops to elevation 13.0 feet NGVD or the stage in the impoundment is 8.0 feet. It is discharging up to 125 cfs on peak and for bleed down to the C-51 Canal via Basin A then to STA-1E. Two 125 cfs pumps are located in Acme C-7 canal to assist in delivering discharges from the impoundment to the C-51 Canal. Seepage is collected and returned to the impoundment by two, 65 cfs pumps. They are turned on when the stage in the seepage canal reaches 13.6 feet NGVD and turned off when the stage drops to elevation 13.0 feet NGVD.

Location: East of the Loxahatchee National Wildlife Refuge (WCA 1) at the southwestern end of the Acme Improvement District.

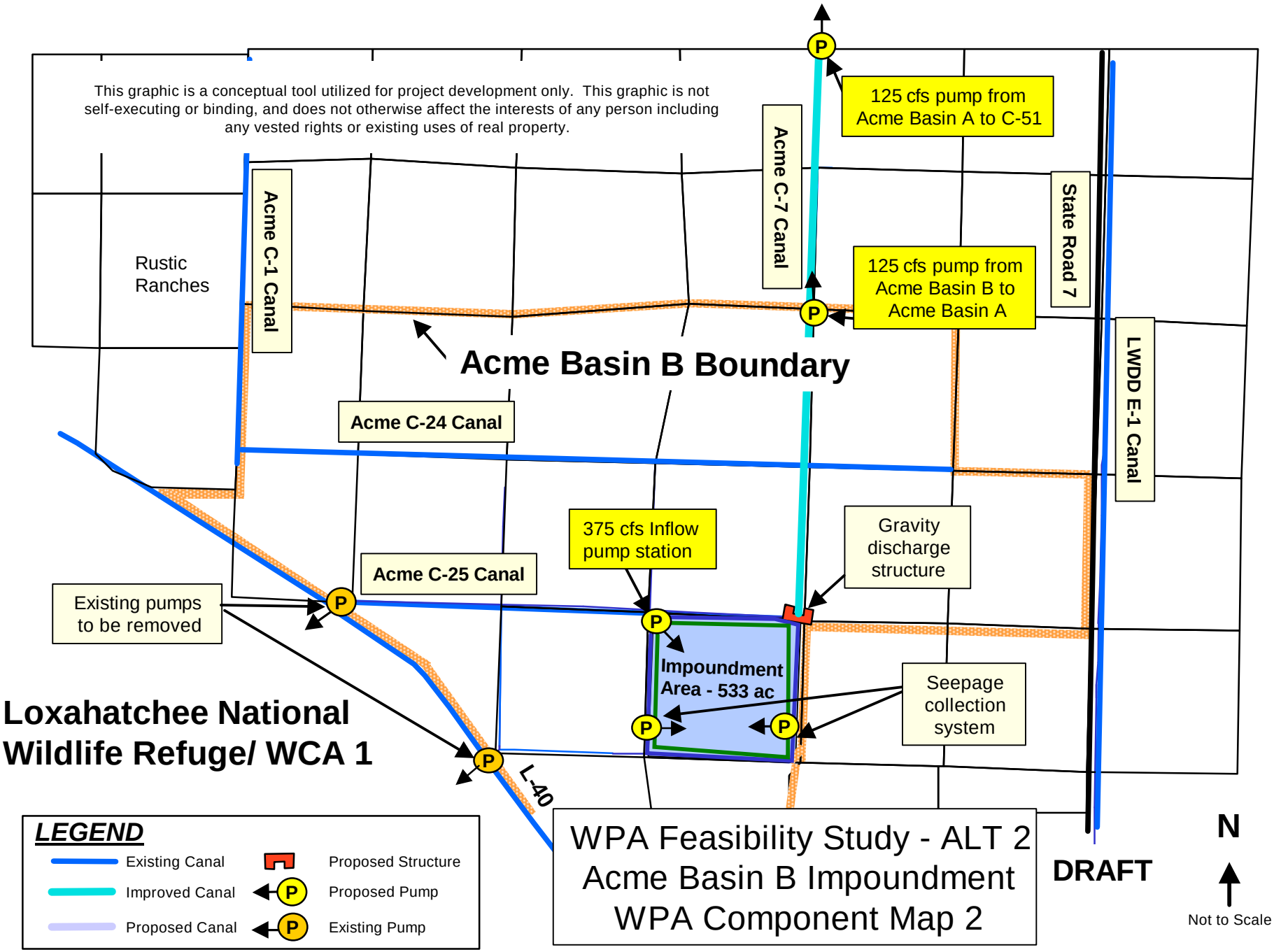
Counties: Palm Beach

Summary of modifications from Alternative 1: The 357-acre STA is not included in this simulation. 125 cfs of runoff from Basin B will be sent north to the C-51 Canal via Basin A.

Assumptions and Related Considerations:

1) Existing flood protection is maintained.
2) Runoff from Basin A increases from the currently permitted 2/3" per day to 1" per day. The additional 1/3" per day volume for Basin A (125 cfs) is made up of Basin B runoff routed to Basin A. Additional flows are directed north to the C-51 Canal through the permitted discharge facilities.
3) Water quality from Basin B does not adversely effect volumes and loads to STA-1E above what is designed for Acme Basin A at 1" per day.
4) Land is available for attenuation storage and canal upgrades (if necessary).

5) Sufficient peak flow attenuation storage is provided to maintain existing flood protection.
6) Off peak discharge is sent east if STA-1E does not have the treatment capacity to handle this extra volume/load.
7) Acme Improvement District is evaluating their system to determine what internal changes need to be made to enable 125 cfs of flow through Basin A via the Acme C-7 canal to the C-51 Canal.


This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.
Rustic Ranches
Acme C-1 Canal
Acme C-7 Canal
State Road 7
LWDD E-1 Canal
125 cfs pump from Acme Basin A to C-51
125 cfs pump from Acme Basin B to Acme Basin A
Acme Basin B Boundary
Acme C-24 Canal
Acme C-25 Canal
375 cfs Inflow pump station
Gravity discharge structure
Existing pumps to be removed
Impoundment Area - 533 ac
Seepage collection system
L-40
Loxahatchee National Wildlife Refuge/ WCA 1
LEGEND
Existing Canal
Improved Canal
Proposed Canal
Proposed Structure
Proposed Pump
Existing Pump
WPA Feasibility Study - ALT 2
Acme Basin B Impoundment
WPA Component Map 2
DRAFT
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Not to Scale

Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge including the Strazzulla Tract (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge (LNWR) including the Strazzulla Tract - SEE WPA COMPONENT MAP 3

Purpose: Provide a hydrological and ecological connection to the Loxahatchee National Wildlife Refuge and expand the spatial extent of protected natural areas.

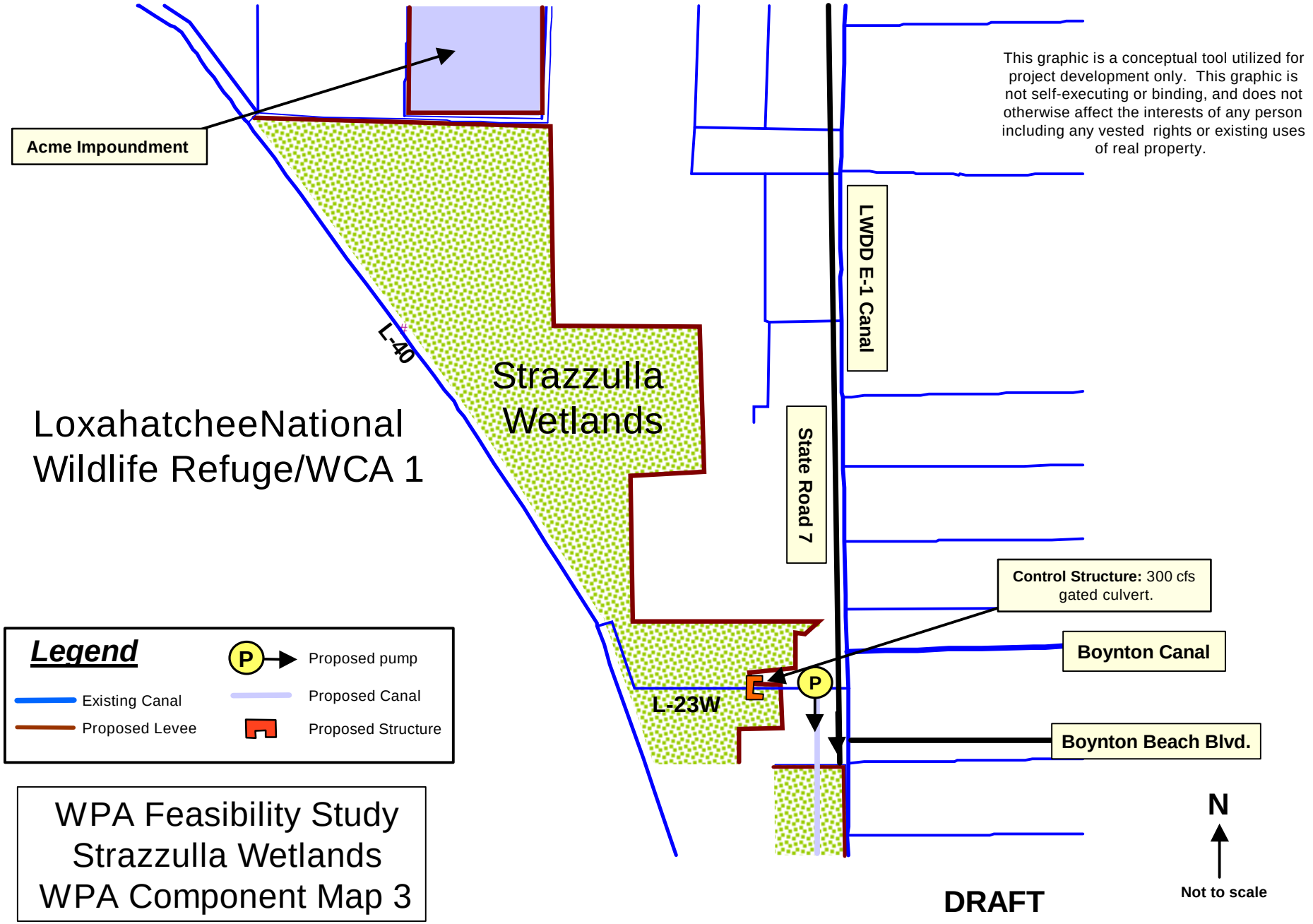
Intent: The additional lands to be purchased combined with the lands acquired are acting as a buffer between higher water stages to the west and lands to the east that must be drained. This increase in spatial extent provides vital habitat connectivity for species that require large unfragmented tracts of land for survival. It also contains the only remaining cypress habitat in the eastern Everglades and one of the few remaining sawgrass marshes adjacent to the coastal ridge. This area provides an essential Everglades landscape heterogeneity function.

Design:
1) A three-foot high berm is constructed along the northern and eastern boundaries of the property to reduce runoff and losses to the east and allow deeper water depths.
2) A control structure is constructed in LWDD L-23W canal and consists of a gated culvert capable of passing 300 cfs. The structure is operated to control the LWDD L-23W canal at the same elevation as the L-40 borrow canal when it is above elevation 15.8 feet NGVD. When L-40 is below elevation 15.8 feet NGVD it is operated to control it at the same elevation as the LWDD canal system.
3) This feature also includes the acquisition of approximately 3335 acres of land adjacent to WCA 1 including the Strazzulla Tract.

Location: East of WCA 1 in central Palm Beach County
Counties: Palm Beach

Summary of modifications from Alternative 1: The operation of the control structure in LWDD L-23W is modified from Alternative 1.

Assumptions and Related Considerations:
1) Water supply deliveries to LWDD via L-23W are not interrupted by the operation of the proposed control structure.


This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.
Acme Impoundment
L-40
Strazzulla Wetlands
LoxahatcheeNational Wildlife Refuge/WCA 1
LWDD E-1 Canal
State Road 7
Control Structure: 300 cfs gated culvert.
Boynton Canal
Boynton Beach Blvd.
L-23W
P
Legend
Proposed pump
Existing Canal
Proposed Canal
Proposed Levee
Proposed Structure
WPA Feasibility Study
Strazzulla Wetlands
WPA Component Map 3
N
Not to scale
DRAFT

Component VV

Geographic Region: Central Eastern Palm Beach County

Component Title: Agricultural Reserve Impoundment – SEE WPA COMPONENT MAP 4

Purpose: Increase water supply for central and southern Palm Beach County by capturing and storing water currently discharging to tide.

Operation: The impoundment fills during the wet-season from excess water pumped out of the western portions of the C-15 and C-16 basins located in the Lake Worth Drainage District (LWDD) (back pumped). Water releases back to LWDD to maintain canal stages during the dry-season. As with the base cases, regional water is supplied to the LWDD when water levels fall below 15.8 feet NGVD. Water is back pumped into the impoundment when water levels are above 16.0 feet NGVD in the LWDD system canals.

In Alternative 2, the footprint of the impoundment includes two compartments; a northern (174 acres) and southern (750 acres) compartment. A 600 cfs pump delivers water to the northern compartment from the LWDD L-30 canal and the delivery canal. The southern compartment receives water from LWDD canals via a 250 cfs pump and from the northern compartment via gated culverts.

Aquifer Storage and Recovery (ASR) capacity improves water supply deliveries during dry-seasons and droughts. Fifteen (15), 5-MGD capacity ASR wells are proposed with a total injection and recovery capacity of 75 MGD or about 116 cfs. Water from the impoundment is injected into the ASR when depths in the impoundment are above 1 foot via horizontal wells. Water is supplied from the impoundment up to the outflow capacity to meet local water supply demands before tapping water from the ASR system.

Design:

1) Northern and southern compartments are approximately 174 acres and 750 acres, respectively with a maximum depth of 12 feet (volume of 2088 acre-feet for the northern compartment and 9000 acre-feet for the southern compartment). Location is west of SR 7 and south of Boynton Beach Boulevard.
2) A delivery canal (capacity of 600 cfs) directs flows from LWDD E-1, L-23W and L-30 canals south to the impoundment. A 3-foot high berm is constructed east of the canal and west of SR 7. One, 400 cfs pump at the north end of the delivery canal pulls flows from the LWDD L-30, L-23W and E-1 canals.
3) Inflow pump capacity = 850 cfs to be provided by one 600 cfs pump in the southeast corner of the northern compartment of the impoundment pumping from the delivery canal and L-30 canal and one, 250 cfs pump in the southeast corner of the southern compartment pumping from a new canal that connects through the powerlines to

the LWDD E-1 canal. Each pump has an on elevation of 16.2 feet NGVD and an off elevation of 15.5 feet NGVD.

4) Outflow structure capacity = 500 cfs @ 4 feet head for water supply deliveries to the LWDD canal system. The structure consists of four, 4-foot diameter gated culverts with a design head of 4 feet.
5) Emergency overflow structure to WCA 1 = 300 cfs consists of five, 5-foot diameter gated culverts.
6) Seepage collects and returns to the impoundment by a canal to be located between the compartments and on the north, east and south perimeters of the impoundment and one, 200 cfs pump that is located on the south end of the impoundment. Seepage from the northern half of the impoundment is pumped back by the 600 cfs pump station located at the southern end of the delivery canal. The control elevation of the seepage collection canal is 16.0 feet NGVD.
7) Two new box culverts with a total capacity of 600 cfs connect the northern and southern compartments. These structures allow the northern compartment to discharge into the southern compartment.

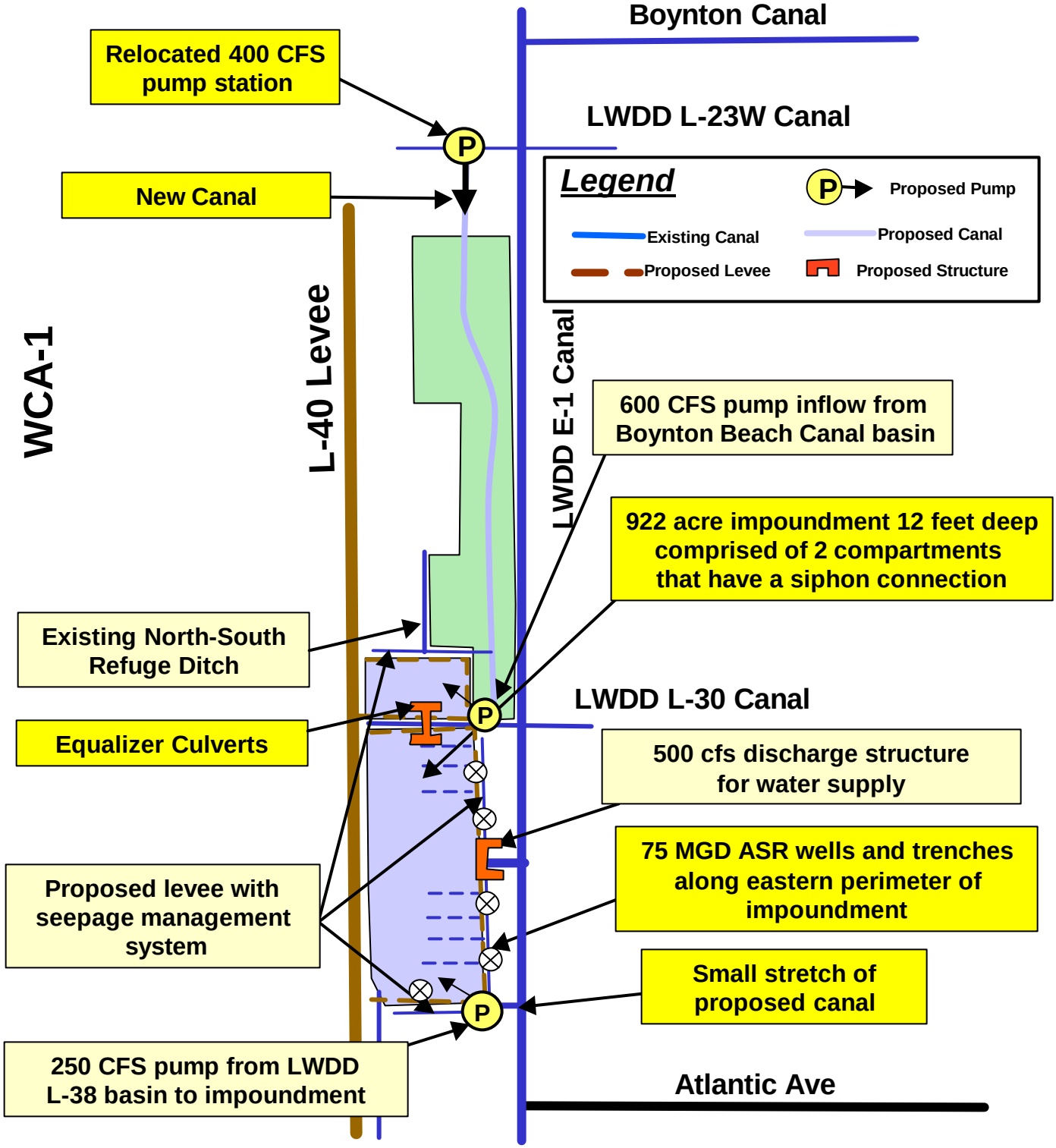
Summary of modifications from Alternative 1: Impoundment footprint is modified to include two compartments. The size is reduced from 1240 acres to 924 acres. Two new box culverts are included to connect the northern and southern sections. Inflow pump locations and capacities are modified. Production wells are revised to horizontal wells. A new canal is proposed to connect the southeast corner of the impoundment to the LWDD E-1 canal.

Location: The western portion of central Palm Beach County adjacent to WCA 1 and south of Boynton Beach Boulevard.

Counties: Palm Beach

Assumptions and related considerations:

1) Excess storage is discharged to the LWDD during off peak times.
2) Conveyance may need to be improved in the LWDD canal system to pass the proposed 500-cfs discharge from the impoundment.
3) No operation changes in the LWDD.
4) Recovery rate of 70 percent for water stored by the ASR.
5) Water supply deliveries from the Loxahatchee National Wildlife Refuge (WCA 1) to the LWDD canal system is maintained in the existing delivery canal now located along the northern end of the southern compartment of the impoundment.
6) If the area between the Refuge and SR 7 cannot be acquired then an additional structure may be required at the southwest corner of the impoundment to maintain flood protection for this area during peak storm events.
7) A land swap with the Refuge is completed.



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WPA Feasibility Study - ALT 2
Agricultural Reserve Impoundment and ASR
WPA Component Map 4

Component M

Geographic Region: Water Preserve Area - Palm Beach County

Component Title: Hillsboro Impoundment (aka Site 1) – SEE WPA COMPONENT MAP 5

Purpose: Water supply storage impoundment to supplement water deliveries to the Hillsboro Canal during the dry-season.

Operation: The impoundment fills during the wet-season from excess water backpumped from the Hillsboro Canal. Water releases back to the Hillsboro Canal to help maintain canal stages during the dry-season. If water is not available in the impoundment, existing rules for water delivery to this region apply. Aquifer Storage and Recovery (ASR) is proposed in conjunction with the impoundment to improve water supply during dry-seasons and droughts. A total of thirty (30) 5 MGD capacity ASR wells are included in this alternative (total injection and recovery capacity is 150 MGD or about 230 cfs). Water from the Hillsboro Impoundment is injected into the ASR wells when stages in the impoundment are greater than 12.0 feet NGVD (0.5 feet of depth). Water is recovered from the ASR wells when stages in the Hillsboro Canal are less than 7.0 feet NGVD.

For Alternative 2, the impoundment remains compartmentalized into three cells, two are located north of the Hillsboro Canal and one south. The total acreage of the impoundment remains the same as Alternative 1 (2246 acres). To reduce seepage across L-40 levee in the southeast corner of the Refuge, a new structure is located approximately 2.0 miles south of LWDD control structure no. 20. A new pump and gated culverts are added to the northeast corner of the impoundment for flood control and water supply deliveries. North Springs Improvement District (NSID) discharges are redirected north to the southern compartment of the impoundment via the L-36 borrow canal and a proposed pump station.

Design:

1) 2246 acres with a maximum depth of 6 feet located north and south of the Hillsboro Canal. A seepage canal running along the east side of the impoundment directs seepage south to the Hillsboro Canal through a gated culvert (100-cfs capacity). Seepage south of the Hillsboro Canal collects in the relocated L-36 borrow canal and discharges to the Hillsboro Canal through the relocated S-39A structure.
2) Inflow pump capacity = 1700 cfs. The 700-cfs pump in the Hillsboro Canal turns on when the stage in the Hillsboro Canal is equal to 7.8 feet NGVD and turns off when the canal stage drops to elevation 7.6 feet NGVD. The pump also turns off when the stage in the impoundment north of the Hillsboro Canal reaches 17.0 feet NGVD. The 500 cfs pump that brings water from LWDD's E-1W-S turns on when the stage in the E-1W-S canal is at elevation 12.1 feet NGVD and turns off when the canal stage drops to elevation 9.5 feet NGVD. A 500-cfs pump in the southwest corner of the

impoundment is included to direct NSID flow into the impoundment. The pump turns on at elevation 7.3 feet NGVD and off at elevation 7.0 feet NGVD.

3) Outflow structure capacity into the Hillsboro Canal for water supply deliveries from the impoundment = 700 cfs. This structure consists of three, 4-foot diameter CMP gated culverts, each 70 feet long and 300 cfs gated culverts.
4) Emergency outflow structures to the Hillsboro Canal consists of one, 200-foot long weir and one, 65-foot long weir, each with a crest at elevation 18.3 feet NGVD.
5) Thirty (30) – 5 MGD ASR wells (total capacity 150 MGD or about 230 cfs) to be located on the inside of the proposed eastern and southern perimeter dikes with horizontal supply wells that are located on the inside of the impoundment.

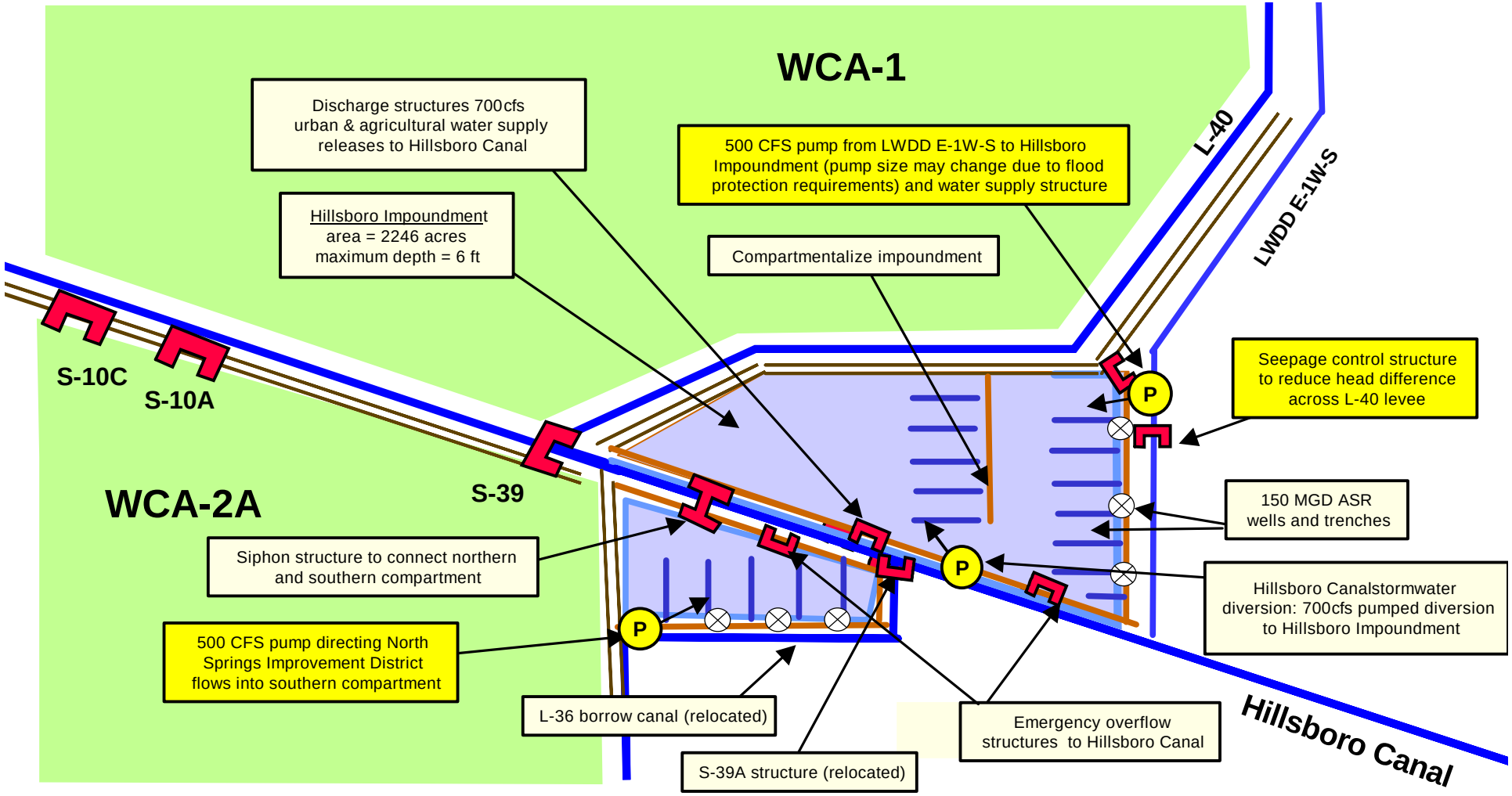
Location: The Water Preserve Area Land Suitability Analysis previously identified 2246-acre site.

Counties: Palm Beach

Summary of modifications from Alternative 1: To reduce seepage for the southeast corner of the Refuge across L-40 levee, a new structure is located approximately 2.0 miles south of the LWDD control structure no. 20. A new pump and gated culverts are added to the northeast corner of the impoundment for flood control and water supply deliveries. NSID discharges are redirected north to the southern compartment of the impoundment via the L-36 borrow canal and a proposed pump station.

Assumptions and related considerations:

1) Excess storage discharges to Water Conservation Area 2A if a treatment facility is added to meet Everglades' water quality standards.
2) Recovery rate of 70 percent for water that is stored by ASR.
3) Conveyance of North Springs Improvement District flows to the Hillsboro Canal is maintained.



WPA Feasibility Study - ALT 2
Hillsboro Impoundment and ASR
WPA Component Map 5

LEGEND

- P — Proposed Pump
- Water Control Structure
- Proposed Levee
- Trench for ASR
- ASR Well

N

Not to Scale

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Component YY

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 2 flows to Central Lake Belt Storage - SEE WPA COMPONENT MAP 6

Purpose: Capture excess water in Water Conservation Area 2B (WCA 2B) to reduce stages above desired target levels in WCA 2B and to divert water through improved L-37 and L-33 borrow canals to 1) North East Shark River Slough (NESRS) to meet targets or 2) Central Lake Belt Storage Area.

Operation: Surface water in WCA 2B above target levels overflows through 3 structures along L-35 and L-35A to the North New River Canal. It is pumped to the L-37 borrow canal along with seepage from WCA 2B. The North New River Canal, L-37 and L-33 borrow canals are improved to accept this additional flow along with the seepage collected from WCA 3. This water is pumped to NESRS if the Slough is below target levels or into a lined reservoir that is located south of the confluence of the L-33 borrow canal and the C-6 Canal is referred to as the Central Lake Belt Storage Area (CLBSA). SEE COMPONENT S.

Design:

1) 3- diversion structures with 120 cfs capacity @0.5 feet of head and 350 cfs capacity @4.0 feet of head along the southern perimeter of WCA 2B to pass flows greater than targets.
2) Structure S-124 is removed. A basin divide structure to be located immediately downstream of the confluence of L-35A and L-35 borrow canals with a control elevation of 4.25 feet NGVD in order to separate Water Conservation Area 2B overflow from water supply deliveries made southeast in the North New River Canal.
3) Construct a divide structure northeast of the easternmost WCA 2B diversion structure with a crest at elevation 6.3 feet NGVD to separate WCA 2B flows that are directed south.
4) 1500 cfs pump station to divert overflow and seepage from the L-35 borrow canal to the L-37 borrow canal. Pump on when water levels in WCA 2B are 1.25 feet above target and pump off when water levels in WCA 2B drop below 1.0 foot above target.
5) Culvert with 1500 cfs capacity to pass flows that are generated by both seepage collection in the L-35A and L-35 borrow canals and flows above targets in WCA 2B from the L-38 East borrow canal to the L-37 borrow canal.
6) Conveyance improvements for L-37 and L-33 borrow canals to 3000 cfs in order to handle WCA 2B flows plus seepage from WCA 3.
7) Remove S-9XN and S-9XS or improve structures to accommodate increases in flows.

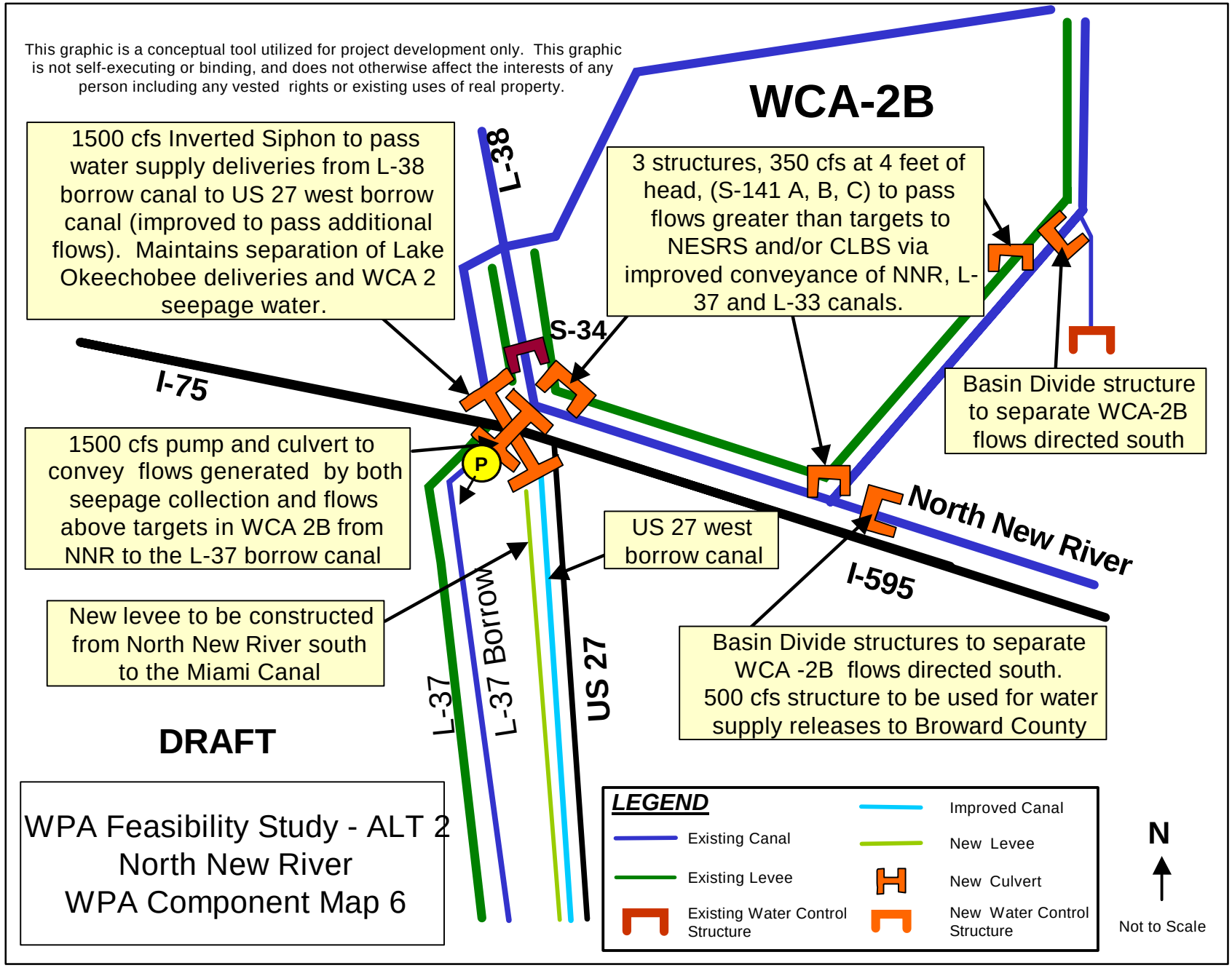
Location: The overflow structures are located along the southern levee of WCA 2B. L-37 and L-33 borrow canal improvements are located east of the Protective levees and 0.5 mile west of US Highway 27 between the North New River Canal and the Miami Canal.

Counties: Broward

Summary of modifications from Alternative 1: No change from Alternative 1 .

Assumptions and related considerations:

1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump station.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WCA-2B
1500 cfs Inverted Siphon to pass water supply deliveries from L-38 borrow canal to US 27 west borrow canal (improved to pass additional flows). Maintains separation of Lake Okeechobee deliveries and WCA 2 seepage water.
3 structures, 350 cfs at 4 feet of head, (S-141 A, B, C) to pass flows greater than targets to NESRS and/or CLBS via improved conveyance of NNR, L-37 and L-33 canals.
L-38
S-34
I-75
Basin Divide structure to separate WCA-2B flows directed south
1500 cfs pump and culvert to convey flows generated by both seepage collection and flows above targets in WCA 2B from NNR to the L-37 borrow canal
P
North New River
US 27 west borrow canal
I-595
New levee to be constructed from North New River south to the Miami Canal
L-37
L-37 Borrow
US 27
Basin Divide structures to separate WCA -2B flows directed south. 500 cfs structure to be used for water supply releases to Broward County
DRAFT
WPA Feasibility Study - ALT 2
North New River
WPA Component Map 6
LEGEND
Existing Canal
Existing Levee
Existing Water Control Structure
Improved Canal
New Levee
New Culvert
New Water Control Structure
N
Not to Scale

Component O

Geographic Region: Water Preserve Area - Broward County

Component Title: Water Conservation Area (WCA) 3A and 3B Levee Seepage Management – SEE WPA COMPONENT MAPS 7 and 8

Purpose: Reduce seepage from WCAs 3A and 3B to improve hydropatterns within the Conservation Areas by allowing higher water levels in the borrow canals and longer inundation durations within the marsh areas that are located east of the WCAs and west of US Highway 27. Seepage from the WCAs and marshes is collected and directed south into the Central Lake Belt Storage Area. This maintains flood protection and the separation of seepage water from urban runoff originating in the C-11 Basin and Lake Okeechobee water supply deliveries.

Operation: The L-37 and L-33 borrow canals are held at higher stages as part of the WCA 2 seepage collection and conveyance system (Component YY). Seepage that is collected in the L-37 and L-33 borrow canals and from the marsh areas will be directed into the WCA 2 seepage collection and conveyance system and is directed south into the Central Lake Belt Storage Area or directly to the North East Shark River Slough.

Design: New levees are constructed west of US Highway 27 from the North New River Canal to the Miami (C-6) Canal to separate seepage water from the urban runoff collected in the C-11 Diversion Impoundment and Canal (Component Q).

1) The L-37 and L-33 borrow canals are controlled at higher stages, elevations 8.0 feet NGVD and 7.0 feet NGVD, respectively, as are the marshes east of the WCAs. A control structure is added in the L-37 borrow canal just north of the S-9 pump station. It consists of a gated spillway, which maintains the L-37 borrow canal at elevation 8.0 feet NGVD. Another control structure consisting of a gated spillway is added in L-33 borrow canal just north of its intersection with the C-6 Canal and maintains the L-33 borrow canal at elevation 7 feet NGVD.
2) A divide structure is added in the C-11 Canal, east of US Highway 27 to maintain a headwater stage of 4.0 feet NGVD and the separation of seepage water from urban runoff. Water from the C-11 west basin is diverted south to the North Lake Belt Storage Area.

Location: Seepage that is collected in borrow canals along the existing eastern protective levees adjacent to WCA 3. Divide structure that is located in C-11 Canal east of US Highway 27.

Counties: Broward

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:

1) It is assumed that the seepage from the Water Conservation Areas meets the water quality standards necessary to achieve ecosystem restoration.

Component Q

Geographic Region: Water Preserve Area - Broward County

Component Title: Western C-11 Diversion Impoundment and Canal -- to North Lake Belt Storage Area - SEE WPA COMPONENT MAPS 7

Purpose: Divert untreated runoff from the western C-11 basin that is presently discharged into Water Conservation Area 3A into the C-11 Impoundment prior to sending it south to the North Lake Belt Storage Area (NLBSA).

Operation: Divert runoff previously backpumped into the Water Conservation Area 3A in the western C-11 Canal basin into the C-11 Impoundment until full, then send it to the C-9 Impoundment until full and finally to NLBSA. If storage capacity is not available in the C-11 Impoundment, C-9 Impoundment or NLBSA, then the S-9 pump station is used to provide flood protection for the western C-11 basin and runoff is pumped into WCA-3A. To improve groundwater elevations in the eastern C-11 Canal basin, the S-9 seepage divide structure operates to maintain the western C-11 Canal stage at elevation 3.5 feet NGVD.

For Alternative 2, the impoundment depth increases to 6 feet. A shallower area along the eastern boundary is held at 2 feet to improve seepage control and allow the permitted mitigation areas to be relocated in it, out of the 6-foot deep area. A 7-foot high internal levee separates the west and east compartments. The two compartments interconnect to allow transfer of flows.

Design:

1) 2500 cfs diversion canal west of US Highway 27 between the C-11 and C-9 Canals and 2500 cfs conveyance capacity improvements to the C-9 Canal between S-30 and the diversion structure into NLBSA.
2) A 2500 cfs inflow pump station in the C-11 Canal to direct runoff to the C-11 Impoundment (pump on elevation 4.0 feet NGVD and pump off elevation 3.0 feet NGVD or when the impoundment reaches 4 feet deep).
3) 1734-acre impoundment is surrounded by an 11-foot high external levee. 1119 acres has a maximum depth of 6 feet and 615 acres has a maximum depth of 2 feet.
4) Seepage collection canals and pumps for C-11 Impoundment. Seepage collection canal system is maintained between elevations of:
   6.5 and 6.0 feet NGVD by a 25-cfs pump (northern section)
   5.0 and 5.3 feet NGVD by a 240-cfs pump (eastern section)
   7.5 and 8.0 feet NGVD by an 80-cfs pump (western section)
5) 2200 cfs discharge structure @ 4 feet of head to discharge from the impoundment to the US 27 west borrow canal.
6) A 7-foot high internal levee separates the western 6-foot deep storage area from the 2-foot deep eastern storage area. Transfer of flow is accomplished by 3 sets of gated culverts each consisting of two 60-foot long 72-inch diameter culverts.

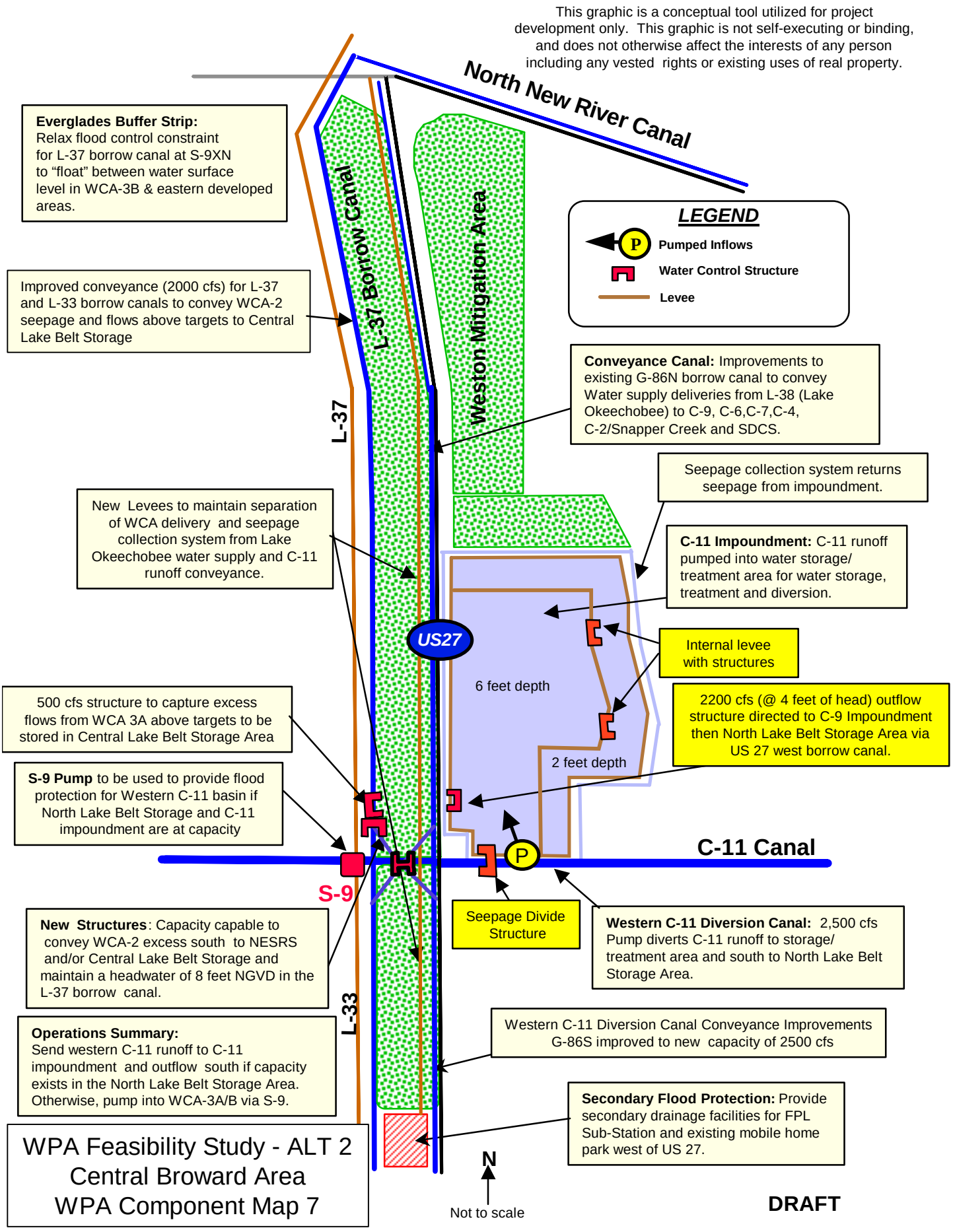
Location: The diversion canal is located west of US Highway 27 between C-11 and C-9 Canals. The C-11 Impoundment is located northwest of the intersection of US Highway 27 and C-11 Canal.

Counties: Broward, Miami-Dade

Summary of modifications from Alternative 1: The impoundment depth increases to 6 feet. A shallower area along the eastern boundary will be held at 2 feet to improve seepage control and allow the permitted mitigation areas to be located in it, out of the 6-foot deep area. A 7-foot high internal levee separates the west and east compartments. The two compartments are interconnected to allow transfer of flows.

Assumptions and related considerations:

1) Flood protection component for FPL substation and mobile home park may be needed. For each facility, propose a 60 cfs pump with an on elevation of 6.0 feet NGVD and an off elevation of 5.0 feet NGVD.
2) Telemetry systems are required for all operable structures and pump stations.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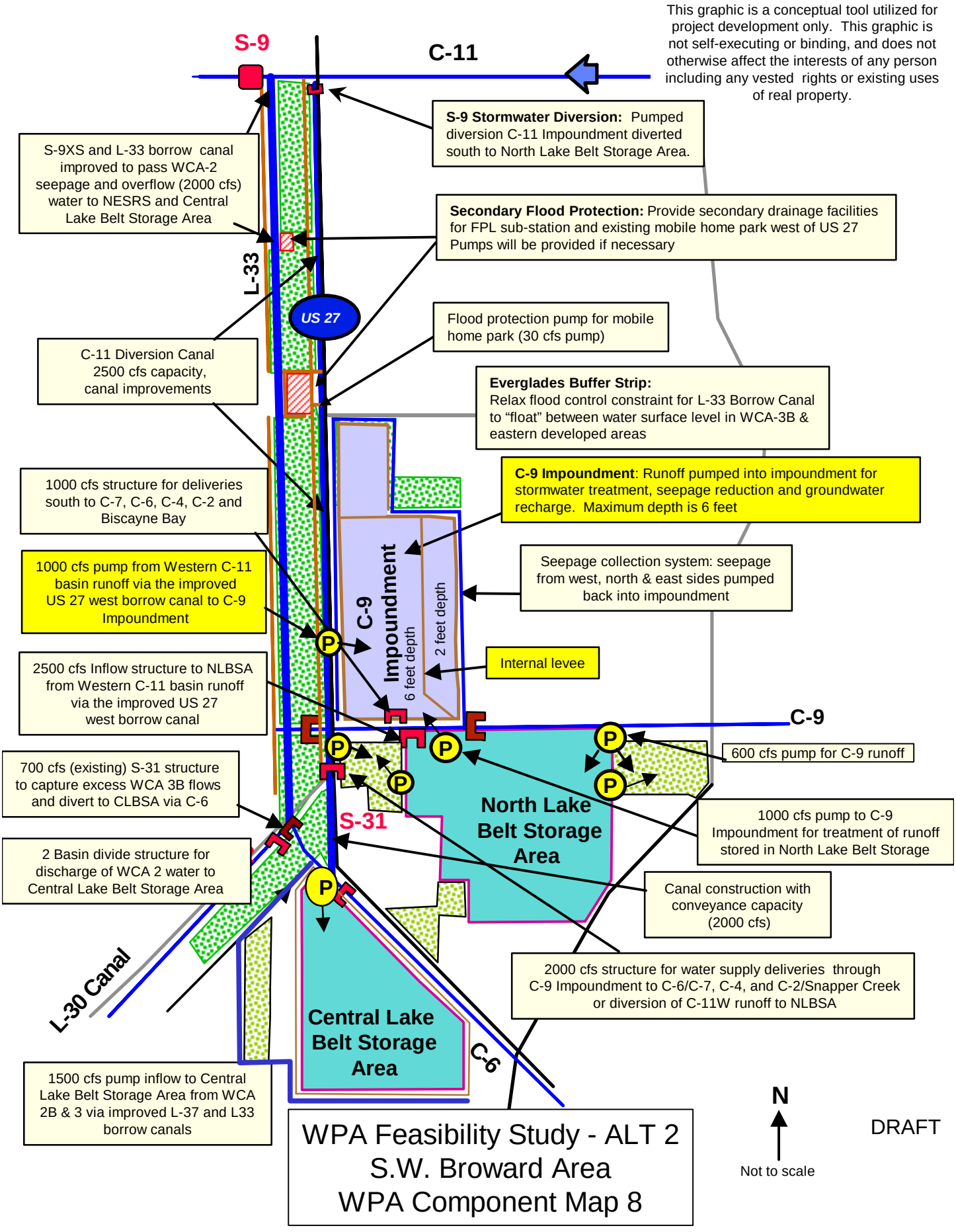
North New River Canal
Everglades Buffer Strip: Relax flood control constraint for L-37 borrow canal at S-9XN to "float" between water surface level in WCA-3B & eastern developed areas.
L-37 Borrow Canal
Weston Mitigation Area
LEGEND
P Pumped Inflows
Water Control Structure
Levee
Improved conveyance (2000 cfs) for L-37 and L-33 borrow canals to convey WCA-2 seepage and flows above targets to Central Lake Belt Storage
Conveyance Canal: Improvements to existing G-86N borrow canal to convey Water supply deliveries from L-38 (Lake Okeechobee) to C-9, C-6,C-7,C-4, C-2/Snapper Creek and SDCS.
L-37
Seepage collection system returns seepage from impoundment.
New Levees to maintain separation of WCA delivery and seepage collection system from Lake Okeechobee water supply and C-11 runoff conveyance.
C-11 Impoundment: C-11 runoff pumped into water storage/ treatment area for water storage, treatment and diversion.
US27
Internal levee with structures
6 feet depth
2 feet depth
500 cfs structure to capture excess flows from WCA 3A above targets to be stored in Central Lake Belt Storage Area
2200 cfs (@ 4 feet of head) outflow structure directed to C-9 Impoundment then North Lake Belt Storage Area via US 27 west borrow canal.
S-9 Pump to be used to provide flood protection for Western C-11 basin if North Lake Belt Storage and C-11 impoundment are at capacity
C-11 Canal
P
S-9
Seepage Divide Structure
Western C-11 Diversion Canal: 2,500 cfs Pump diverts C-11 runoff to storage/ treatment area and south to North Lake Belt Storage Area.
New Structures: Capacity capable to convey WCA-2 excess south to NESRS and/or Central Lake Belt Storage and maintain a headwater of 8 feet NGVD in the L-37 borrow canal.
L-33
Operations Summary: Send western C-11 runoff to C-11 impoundment and outflow south if capacity exists in the North Lake Belt Storage Area. Otherwise, pump into WCA-3A/B via S-9.
Western C-11 Diversion Canal Conveyance Improvements G-86S improved to new capacity of 2500 cfs
Secondary Flood Protection: Provide secondary drainage facilities for FPL Sub-Station and existing mobile home park west of US 27.
WPA Feasibility Study - ALT 2
Central Broward Area
WPA Component Map 7
N
Not to scale
DRAFT


This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.
S-9
C-11
S-9 Stormwater Diversion: Pumped diversion C-11 Impoundment diverted south to North Lake Belt Storage Area.
S-9XS and L-33 borrow canal improved to pass WCA-2 seepage and overflow (2000 cfs) water to NESRS and Central Lake Belt Storage Area
Secondary Flood Protection: Provide secondary drainage facilities for FPL sub-station and existing mobile home park west of US 27 Pumps will be provided if necessary
L-33
US 27
Flood protection pump for mobile home park (30 cfs pump)
C-11 Diversion Canal 2500 cfs capacity, canal improvements
Everglades Buffer Strip: Relax flood control constraint for L-33 Borrow Canal to "float" between water surface level in WCA-3B & eastern developed areas
1000 cfs structure for deliveries south to C-7, C-6, C-4, C-2 and Biscayne Bay
C-9 Impoundment: Runoff pumped into impoundment for stormwater treatment, seepage reduction and groundwater recharge. Maximum depth is 6 feet
1000 cfs pump from Western C-11 basin runoff via the improved US 27 west borrow canal to C-9 Impoundment
Seepage collection system: seepage from west, north & east sides pumped back into impoundment
C-9 Impoundment
6 feet depth
2 feet depth
2500 cfs Inflow structure to NLBSA from Western C-11 basin runoff via the improved US 27 west borrow canal
Internal levee
C-9
600 cfs pump for C-9 runoff
700 cfs (existing) S-31 structure to capture excess WCA 3B flows and divert to CLBSA via C-6
S-31
North Lake Belt Storage Area
1000 cfs pump to C-9 Impoundment for treatment of runoff stored in North Lake Belt Storage
2 Basin divide structure for discharge of WCA 2 water to Central Lake Belt Storage Area
Canal construction with conveyance capacity (2000 cfs)
L-30 Canal
2000 cfs structure for water supply deliveries through C-9 Impoundment to C-6/C-7, C-4, and C-2/Snapper Creek or diversion of C-11W runoff to NLBSA
Central Lake Belt Storage Area
C-6
1500 cfs pump inflow to Central Lake Belt Storage Area from WCA 2B & 3 via improved L-37 and L33 borrow canals
WPA Feasibility Study - ALT 2
S.W. Broward Area
WPA Component Map 8
N
Not to scale
DRAFT

Component R

Geographic Region: Water Preserve Area - Broward County

Component Title: C-9 Impoundment - SEE WPA COMPONENT MAP 8

Purpose: Treatment of water supply deliveries from the North Lake Belt Storage Area (NLBSA) to the C-9, C-6/C-7 and C-2/C-4 Canals. Runoff is backpumped into the NLBSA from the western C-9 Canal basin and the western C-11 Canal. The C-9 Impoundment provides treatment of urban runoff that is stored in the North Lake Belt Storage Area, groundwater recharge within the basin and seepage control of WCA 3 and buffer areas are located west of the impoundment.

Operation: In Alternative 2, the design and operation of the C-9 Impoundment are modified. Excess runoff from the C-11 Impoundment is pumped directly into the C-9 Impoundment from the US 27 west borrow canal (new pump). The C-9 Impoundment is divided into three compartments. The west compartment is held at a 6-foot maximum depth with two shallower step down areas located to the north and east. (The north and east compartments will be held at a maximum depth of 2 feet. During dry periods, stormwater that is stored in the NLBSA is pumped into the C-9 Impoundment for treatment (if necessary) and then is released to provide water supply deliveries based on salinity control targets to the C-7, C-6, C-4 and C-2 Canals. Seepage from the C-9 Impoundment is collected and returned.

Design:

1) 2091-acre impoundment is divided into 3 compartments west, east and north. West (1232 acres) is held at a maximum of 6 feet deep, east (474 acres) is held at a maximum of 2 feet deep and north (385 acres) is held at a maximum of 2 feet deep.
2) Inflow structures: One, 1000 cfs pump from US 27 west borrow/delivery canal to C-9 Impoundment. (Pump on when the C-11 Impoundment is discharging and the depth in the impoundment is less than 4 feet above natural ground and pump off when discharge from the C-11 Impoundment is zero). One, 1000 cfs pump (from NLBSA, to be resized as needed) SEE COMPONENT XX. Pump on when water supply deliveries are needed to C-6, C-7, C-4 and C-2 and water level in the NLBSA is above –20.0 feet NGVD or when the depth in the impoundment is less than 4 feet above natural ground.
3) Outflow structures: Two gravity structures each with 1000 cfs capacity at 4 feet of head to C-6, C-7, C-4, and C-2 Canals for water supply deliveries. One is located in the western portion of the impoundment (6-foot depth) and the other is located in the eastern portion of the impoundment (2-foot depth).
4) Seepage Collection: A total of 300 cfs is recycled into the impoundment area. Seepage is collected along the western side of the impoundment by a 100-cfs pump with an on elevation of 8.0 feet and off elevation of 7.5 feet NGVD. Seepage is collected along the eastern side of the impoundment by a 100-cfs pump with an on elevation of 3.0 feet and off elevation of 2.5 feet NGVD. Seepage is collected along

the north side of the impoundment by a 100-cfs pump with an on elevation of 3.0 feet and off elevation of 2.5 feet NGVD.

Location: Site identified by Water Preserve Area Land Suitability Analysis
Counties: Broward

Summary of modifications from Alternative 1: The impoundment is divided into three compartments. The operation of the impoundment is modified. Additional mitigation areas are relocated to the north compartment. The internal levee was relocated. The seepage collection system and inflow pump operation is modified.

Assumptions and related considerations:
1) Additional treatment facility is needed if stored water is backpumped into Water Conservation Area 3A.
2) Telemetry systems are required for all operable structures and pump stations

Component SS

Geographic Region: Everglades Agricultural Area (EAA) and Miami-Dade County

Component Title: Reroute Miami-Dade County Water Supply Deliveries – SEE WPA COMPONENT MAP 6

Purpose: Reroute water supply deliveries that are made to Miami-Dade County from the Miami and Tamiami Canals and Water Conservation Area 3 (WCA 3) to the North New River Canal due to the backfilling of the Miami Canal as part of the decompartmentalization of WCA 3.

Operation: Send water supply deliveries from Lake Okeechobee to Miami-Dade County southeast through the North New River Canal in the Everglades Agricultural Area (EAA) (L-20, L-19, L-18) to S-150. From S-150 send deliveries into L-38W and at the southern terminus of L-38W south through a 1500 cfs pump to the borrow canal along the west side of US Highway 27.

Design:
1) Double the capacity of the North New River Canal (L-18) south of the proposed EAA Storage Reservoir (see Component G – not a component of the South Broward subregional model) to convey additional water supply deliveries to Miami-Dade County as necessary.
2) Double the capacity of S-351 and S-150 to pass additional water supply deliveries to Miami-Dade County as necessary.
3) Improve conveyance in the L-38W borrow canal to 2000 cfs as necessary.
4) Construct an inverted siphon with 1500 cfs capacity to pass water supply deliveries from the L-38 West borrow canal to the US Highway 27 west borrow canal. This maintains the separation of Lake Okeechobee water supply deliveries and WCA 2 seepage and overflow water.
5) Improve conveyance in the borrow canal on the west side of US Highway 27 between L-38W and the Miami Canal as necessary to pass the additional flows.
6) Lower pump intake at S-7 to an elevation of 8.0 feet NGVD.

Location: EAA and Water Conservation Area 3.
Counties: Palm Beach, Broward, and Miami-Dade

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:
1) Reduction in operational flexibility since there is only one delivery route to Miami-Dade County (back-up routes are not available in this Alternative).

Component XX

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: North Lake Belt Storage Area (NLBSA) - SEE WPA COMPONENT MAP 8 and 9

Purpose: In-ground reservoir to capture a portion of runoff from C-6, western C-11 and C-9 basins. The in-ground reservoir with perimeter seepage barrier allows storage of untreated runoff without concerns of ground water contamination. The stored water is used to maintain stages during the dry season in the C-9, C-6, C-7, C-4 and C-2 Canals and to provide deliveries to Biscayne Bay to aid in meeting salinity targets.

Operation: Runoff from the C-6 basin (west of the turnpike), western C-11, and C-9 basins pumps first into the above-ground impoundments (west and east) and then pumps or gravity feeds into the in-ground reservoir. Inflows cease when stages reach approximately 5.0 feet NGVD (0 feet above adjacent land elevation) in the NLBSA.

Outflows for water supply pumps into the C-9 Impoundment prior to delivery to the C-9, C-6, C-7, C-4 and C-2 Canals.

Water from the reservoir can be withdrawn down to a stage of -25 feet NGVD (up to 30 feet of working storage & maximum head on the seepage barrier).

Prioritization of outflows: If water levels in the NLBSA are from between +5.0 feet NGVD and 0.0 feet NGVD, flows discharge to Biscayne Bay via the C-2 Canal. If water levels in the NLBSA are from between 0.0 feet NGVD and -20 feet NGVD, flows discharge to C-9, C-6, C-7, C-4 and C-2 Canals only to prevent salt water intrusion. If water levels in NLBSA drop to levels between –20 feet NGVD and -25 feet NGVD, discharge is limited to the C-9 Canal only to avoid water shortage restrictions.

The storage area is 2910 acres in size and captures a portion of the runoff from the C-6, C-9 and C-11 basins. (Note: SFWMM simulation assumes 5120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are higher from those that are prescribed here.)

In Alternative 2, the west and east Water Redistribution Areas (WRA) fill first to a depth of 4 feet and function as above-ground impoundment areas. Once full, flows are directed into the in-ground storage area. Water supply deliveries are made first from the WRAs if there is available water and then from the NLBSA as previously described. The east and west WRAs are set back 500 feet from the C-9 Canal in order to reduce seepage.

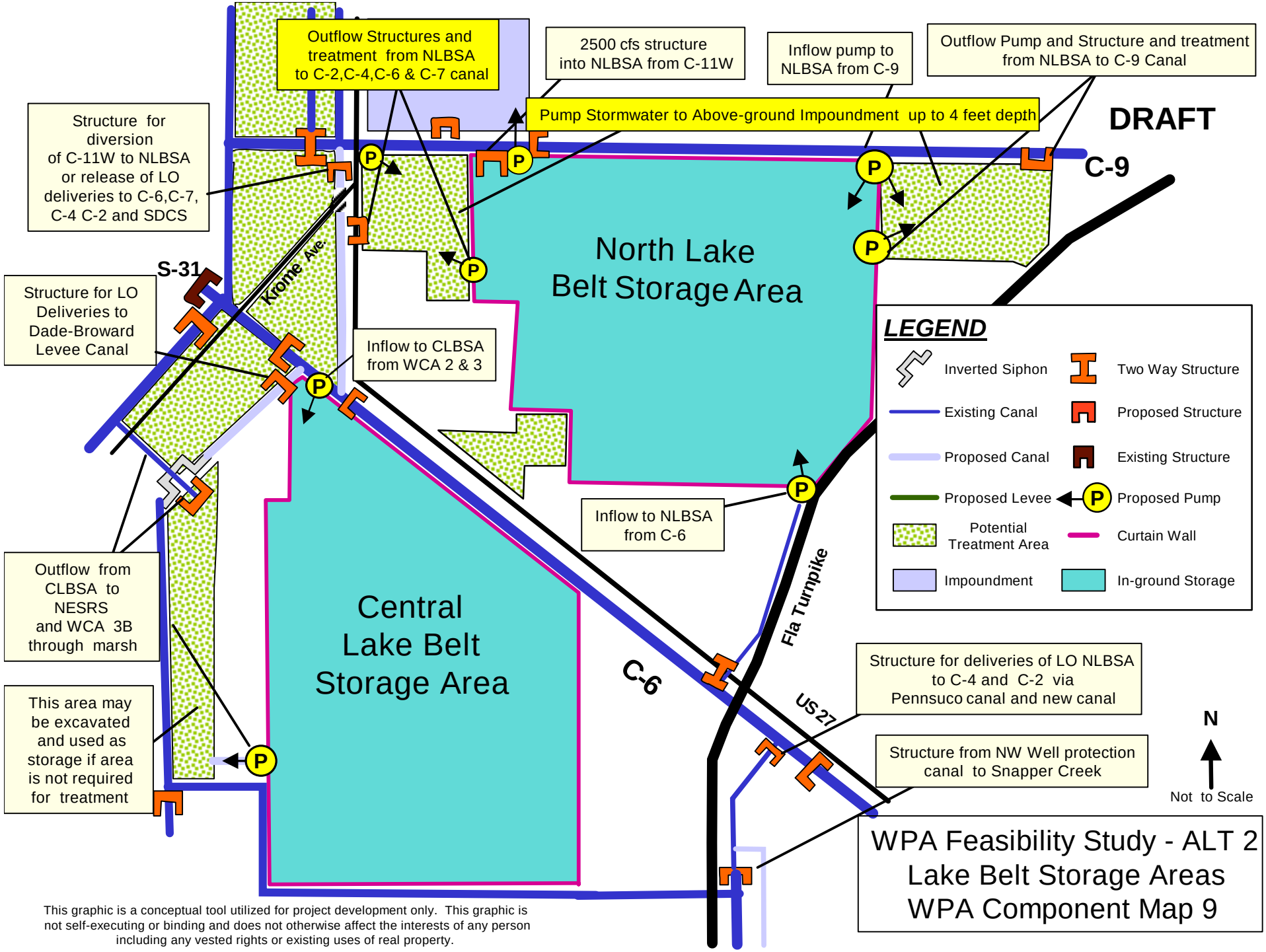
Design:

1) Reservoir: 2910 acres with subterranean seepage barrier extending down 120 feet below ground around the perimeter to enable drawdown during dry periods, prevent seepage and to prevent water quality impacts.
2) Inflow Structures: 2500 cfs gravity structure @ 0.5 feet head, from C-11W. 600 cfs pump from C-9 (pump on 3.0 feet NGVD and pump off 2.5 feet NGVD). 300 cfs pump (pump on 3.5 feet NGVD and pump off 3.0 feet NGVD) from C-6 Canal west of the proposed divide structure which consists of a gated spillway to maintain an upstream stage of 3.5 feet NGVD.
3) Outflow Structures: 1000 cfs pump (pump on between +5.0 and –20.0 feet NGVD and pump off –20.0 feet NGVD or when the C-9 Impoundment is 4 feet deep) to C-9 Impoundment for treatment prior to deliveries to C-6, C-7, C-4 and C-2 to prevent saltwater intrusion in coastal canals. (Detention time requirements need to be determined. Pretreatment in reservoir may reduce size requirements of treatment area). Deliveries from NLBSA are assumed to be divided as follows, 50 percent to C-9 Impoundment, 8 percent to southwest WRA, 17 percent to west WRA and 25 percent to east WRA.
4) Southwest WRA design (214 acres): 100 cfs inflow pump (pump on between 5.0 and –20.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 Canals), 100 cfs gravity discharge structure to the C-6 Canal and two, 180 cfs seepage control pumps on the perimeter seepage canal.
5) West WRA design (444 acres): 100 cfs inflow pump (pump on between 5.0 and –25.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 Canals), 100 cfs gravity discharge structure to US 27 west borrow canal. Seepage from the western and southern sides of the WRA are collected and pumped back into the WRA by a 180-cfs pump with an on elevation of 3.5 feet and off elevation of 3.0 feet NGVD.
6) East WRA design (661 acres): 100 cfs inflow pump (pump on between 5.0 and –25.0 feet NGVD in NLBSA when water supply deliveries are required to C-9 Canal) and 100 cfs gravity discharge structure to the C-9 Canal. Seepage is collected by a canal along the south side of the WRA and discharges into the proposed canal that is located west of the turnpike (connecting the C-6 Canal with the NLBSA) where it ultimately is pumped back into the NLBSA.
7) A stage divide in the C-9 Canal is located east of the outflow structure from the C-9 Impoundment. It consists of a gated culvert with a headwater stage of 5.5 feet NGVD and a tailwater stage of 2.5 feet NGVD and a capacity of 500 cfs. It passes Lake Okeechobee water supply deliveries to the C-9 Canal when other sources are not available.
8) Canal: 800 cfs canal capacity - Water supply discharges are routed to C-4/C-2 via a canal being located east of the Snapper Creek canal (Northwest wellfield protection canal system).
9) 2-1400 cfs delivery structures, one each at the new canal's confluence with C-6 and C-4.

Location: Reservoir is located within the area proposed for rock mining by the Lake Belt Issue Team. It is sited north of Miami Canal (C-6) and South of the C-9 Canal to minimize impacts to the Northwest wellfield.
Counties: Miami-Dade

Summary of modifications from Alternative 1: Change the size of the east WRA to 661 acres along the Florida Turnpike. Add a western WRA of 444 acres. Delete the southern WRA. The western and eastern WRA functions as above-ground impoundments during the wet season, storing 4 feet of water and discharges to the in-ground storage area when full.

Assumptions and related considerations:
1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
2) Treatment facility is needed if stored water is backpumped to the Everglades.
3) All water quality considerations are addressed regarding releases from the reservoir to the water supply wellfields.
4) Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.
5) Limestone Filter Treatment system within the NLBSA may be developed through use of compartmentalization of rock mining excavation pattern.
6) Telemetry systems are required for all operable structures and pump stations.
7) Any specific water quality considerations regarding capture of C-6 basin runoff are addressed during the detailed design stage.



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Component ZZ

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 3 flows to Central Lake Belt Storage Area – SEE WPA COMPONENT MAP 8

Purpose: Capture excess in Water Conservation Area 3A (WCA 3A) and WCA 3B to reduce stages above target stages in Water Conservation Area 3 and to divert water through modified structures at S-9 and S-31 to the Central Lake Belt Storage Area via the L-33 borrow canal.

Operation: When surface water in WCA 3B exceeds target depths by 0.1 feet, it will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal. When surface water in WCA 3A near S-9 exceeds target depths by 1.0 foot, water will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal.

Design:
Outflow Structures - 500 cfs structure @ 2.0 feet of head (new structure) at S-9 (WCA 3A).
700 cfs structure (modify existing S-31 if necessary) (WCA 3B)

Location: The eastern levees of WCA 3.
Counties: Broward and Miami-Dade

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:
1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump stations

Component S

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: Central Lake Belt Storage Area (CLBSA)– SEE WPA COMPONENT MAPS 9 and 10

Purpose: In-ground reservoir to receive excess water from Water Conservation Areas (WCA) 2B, 3A and 3B. The in-ground reservoir, with perimeter seepage barrier, allows storage of large quantities of water without groundwater seepage losses in this highly transmissive region. The water being stored in CLBSA is provided to 1) North East Shark River Slough (NESRS), 2) Water Conservation Area 3B, and 3) to supply flows to Biscayne Bay when available.

Operation: Inflows from the L-33 borrow canal (Component ZZ) are through a 1500 cfs pump. Inflows cease when stages reach approximately elevation 21.0 feet NGVD (16 feet above adjacent land elevation).

Outflows for water deliveries are pumped through a polishing marsh cell prior delivery to NESRS via the L-30 borrow canal and a reconfigured L-31 N borrow canal (Component U). Deliveries of water to NESRS to meet targets occur when NESRS drops below trigger levels and target hydroperiods simulations call for NESRS to be inundated. CLBSA delivers water to WCA 3B through a polishing marsh cell via the L-30 borrow canal to inundate the eastern area of WCA 3B to a 6 inch depth when triggers call for deliveries. This delivery occurs when WCA 3B drops below 6 inches above ground and target hydroperiods simulations indicate inundation in WCA 3B. When available, outflows are directed to Biscayne Bay through discharges to Snapper Creek at the Turnpike.

Water supply from the reservoir is withdrawn down to elevation –28.0 feet NGVD (up to 36 feet of working storage and maximum head on seepage barrier).

Prioritization of Operations: If water levels in the CLBSA are from between +21.0 feet NGVD and -25.0 feet NGVD, flows discharge to NESRS. If water levels in the CLBSA are from between +21.0 feet NGVD and -20 feet NGVD, flows discharge to WCA 3B. If water levels in CLBSA drop to levels between –20 feet NGVD and -28 feet NGVD, discharge is limited to the NESRS only to avoid water shortage restrictions.

The storage area is 3958 acres in size and is used to capture flows above NSM levels within WCA's 2B, 3A and 3B. (Note: SFWMM simulation assumes 5120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are slightly lower from those prescribed here.)

Design:

1) Reservoir: 3958 acres with subterranean seepage barrier extending down 120 feet below ground around the perimeter to enable drawdown during dry periods, to prevent seepage and to prevent water quality impacts on the adjacent Miami-Dade NW wellfield.
2) Inflow Structures: (A) 1500 cfs pump (pump on between +21.0 and –28.0 feet NGVD) from the C-6 Canal. Pump is operated when stages in WCA 2A, 3A and 3B are above targets in those respective WCA's. (B) 1500 cfs gravity structure @ 0.5 feet head east of Krome Avenue. on the C-6 Canal to deliver WCA deliveries via L-37, L-33 borrow canals and S-31. This structure opens whenever WCA 2B, 3A and 3B are above NSM levels and Lake Okeechobee deliveries are not provided to the Dade-Broward Levee Borrow Canal just downstream of the structure on the C-6 Canal. This structure from C-6 Canal east of the intersection of L-33 consists of a gated spillway to maintain an upstream stage of 7.0 feet NGVD when deliveries from the WCA's are not made to CLBSA.
3) Outflow Structures: (A) 800 cfs pump from the CLBSA to NESRS via a 468-acre WRA and the L-30 Canal. Deliveries from CLBSA are directed to the WRA/wetland west of the CLBSA prior to discharge to NESRS and/or WCA 3B via the L-30 Canal. The pump operates when water elevations in NESRS trigger deliveries from CLBSA and when water levels in CLBSA are above -28 feet NGVD. (B) The WRA discharges to L-30 via an 800 cfs gravity structure (Water Redistribution Area detention time requirements need to be determined. Pretreatment in reservoir may reduce the size requirements of the treatment area). The structure is operated from 0.5 feet to 4 feet of head as a flow through discharge operated simultaneously with the outflow pump from CLBSA.
4) 1400 cfs (also see Dade-Broward Levee Component) structure is located downstream of the inflow pump is to be kept closed except for deliveries to coastal canals and the South Dade Conveyance System. The structure consists of a gated spillway to maintain an upstream stage of 7.0 feet NGVD.

Location: Reservoir is located within the area being proposed for rock mining by the Lake Belt Issue Team. It is sited south of the Miami Canal (C-6) and north of the Northwest Wellfield Delivery canal to minimize the impacts to the Northwest wellfield.

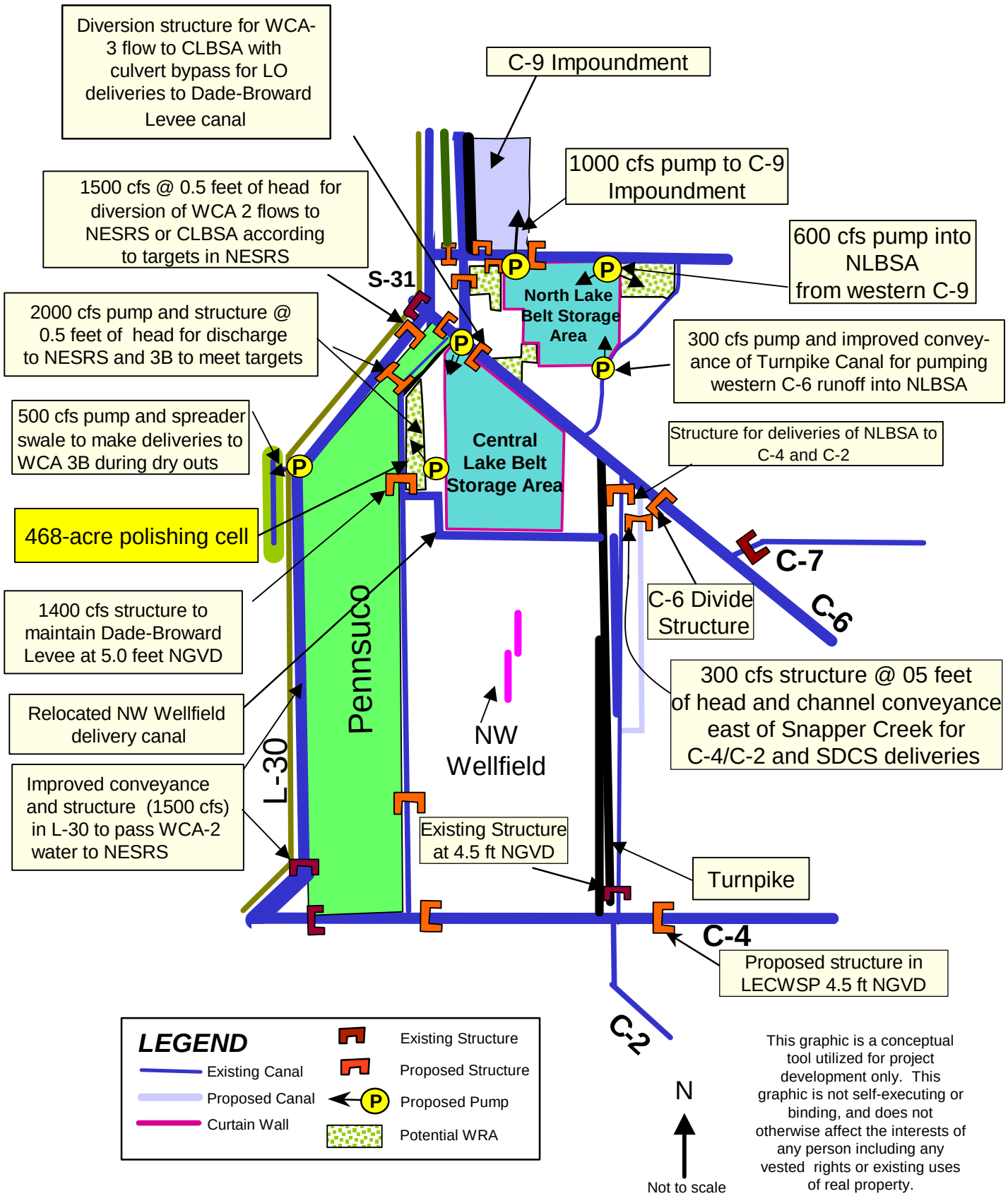
Counties: Miami-Dade

Summary of modifications from Alternative 1: Reduce the size of the Water Redistribution Area to 468 acres and connect it to the CLBSA.

Assumptions and related considerations:

1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
2) Treatment facility is needed if stored water is backpumped to the Everglades (468-acre WRA).
3) All water quality considerations are addressed regarding releases from the reservoir to the water supply wellfields.
4) Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.

5) Limestone Filter Treatment system within the reservoir may be developed through use of compartmentalization of rock mining excavation pattern.
6) Telemetry systems are required for all operable structures and pump stations.



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WPA Feasibility Study - ALT 2
North and Central Lake Belt Storage Areas
WPA Component Map 10

Component T

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: C-4 Structures

Purpose: Proposed structures (East and West) provide two separate benefits. The West structure controls water levels in the C-4 Canal at a higher elevation to reduce seepage losses from the Pennsuco Wetlands and areas to the west of the structure. The East structure reduces regional system water supply deliveries by diverting dry season stormwater flows to the C-2 Canal in order to increase recharge in several nearby coastal wellfields.

Operation: The West structure maintains water levels at 6.5 feet NGVD for seepage control purposes and be capable of passing flood flows with a minimum of head loss and supplying water to the C-4 basin to meet water supply demands. The East structure diverts dry season stormwater flows from the western C-4 basin to the C-2 Canal to recharge the wellfields in the eastern C-2 Canal basin.

Design: West Structure - An operable lift-gate with an overflow elevation of 6.5 feet NGVD and a capacity of approximately 400 cfs (final design specifications to be determined in future detailed design and hydrologic and hydraulic modeling).

Location: Downstream of the Dade-Broward Levee in the C-4 Canal.

East Structure - An operable lift-gate with an overflow elevation of 4.5 feet NGVD and a capacity of approximately 600 cfs (final design specifications to be determined in future detailed design and hydrologic and hydraulic modeling).

Location: In the C-4 Canal, downstream of the confluence of the C-2 and C-4 Canals.

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:
1) The benefits to WCA-3B that are associated with improved C-4 seepage control are directly related to the proposed G-356 pumpage (Modified Water Deliveries).
2) Head losses across the proposed structures do not inhibit passing flood releases when necessary.
3) A pump may be associated with the West structure if back pumping the C-4 basin runoff to the Bird Drive Recharge Area becomes a component of the final alternative.

Component U

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Bird Drive Recharge Area - SEE WPA COMPONENT MAP 11

Purpose: Captures runoff from the western C-4 Canal basin and accepts inflows from the West Dade Wastewater Treatment Plant (WDWTP) to recharge groundwater and reduce seepage from the Everglades National Park (ENP) buffer areas by increasing water table elevations east of Krome Avenue. The facility also provides C-4 flood peak attenuation and water supply deliveries to the South Dade Conveyance System and Northeast Shark River Slough.

Operation: Inflows from western C-4 basin and the WDWTP are pumped into the proposed Recharge Area. C-4 basin runoff in excess of 200 cfs discharges eastward. Inflows from the WDWTP are made according to Miami-Dade County's monthly distribution if there are no inflows from the C-4 Canal and when the recharge area depth is equal to or less than 3 feet above-ground. WDWTP discharges are to deep injection wells if the depth is greater than 3 feet or the C-4 inflow pump is in operation. Inflows from the C-4 basin are routed through a treatment area covering approximately the northern 1/5 of the BDRA. A seepage management system operates around the east and southern perimeters of the Recharge Area. Recharge Area outflows are prioritized to meet 1) groundwater recharge demands, 2) South Dade Conveyance System demands and 3) North East Shark River Slough demands, when supply is available. Regional system deliveries are also routed through the seepage collection canal system of the Bird Drive Recharge Area to the South Dade Conveyance System, which reduces seepage from areas west of Krome Avenue.

Design:
2886-acre reservoir with a maximum depth of 4 feet.

Inflow structure: 200 cfs pump (to be resized as needed) from the C-4 Canal.

Outflow structure:

Water Supply: Gravity structure with 200 cfs capacity at 2 feet of head.
Seepage Collection System: Up to 300 cfs pump to control seepage collection canal at 5.3 feet NGVD. Seepage is returned to Bird Drive Recharge Area.

Delivery System:

800 cfs pump to provide regional system deliveries to SDCS.
800 cfs canal capacity, in addition to the canal that is required for the Bird Drive seepage collection system, to pass the regional system deliveries to the South Dade Conveyance System.
5 miles of canal with 800 cfs capacity between Bird Drive seepage collection system to C-1W east of Krome Avenue.
Relocate S-338 east of Krome Avenue and delivery canal.

Water Redistribution Area:

485-acres with a maximum depth of 4 feet. Inflows from the C-4 Canal are directed into a 2000 foot long spreader swale that is located on the eastern side, west of the perimeter levee. A 7-foot high internal levee extends west across the BDRA and separates the WRA Area from the rest of the Recharge Area.

Location: Northwestern 4 sections in Bird Drive basin. This site was identified during the Water Preserve Area Land Suitability Analysis.

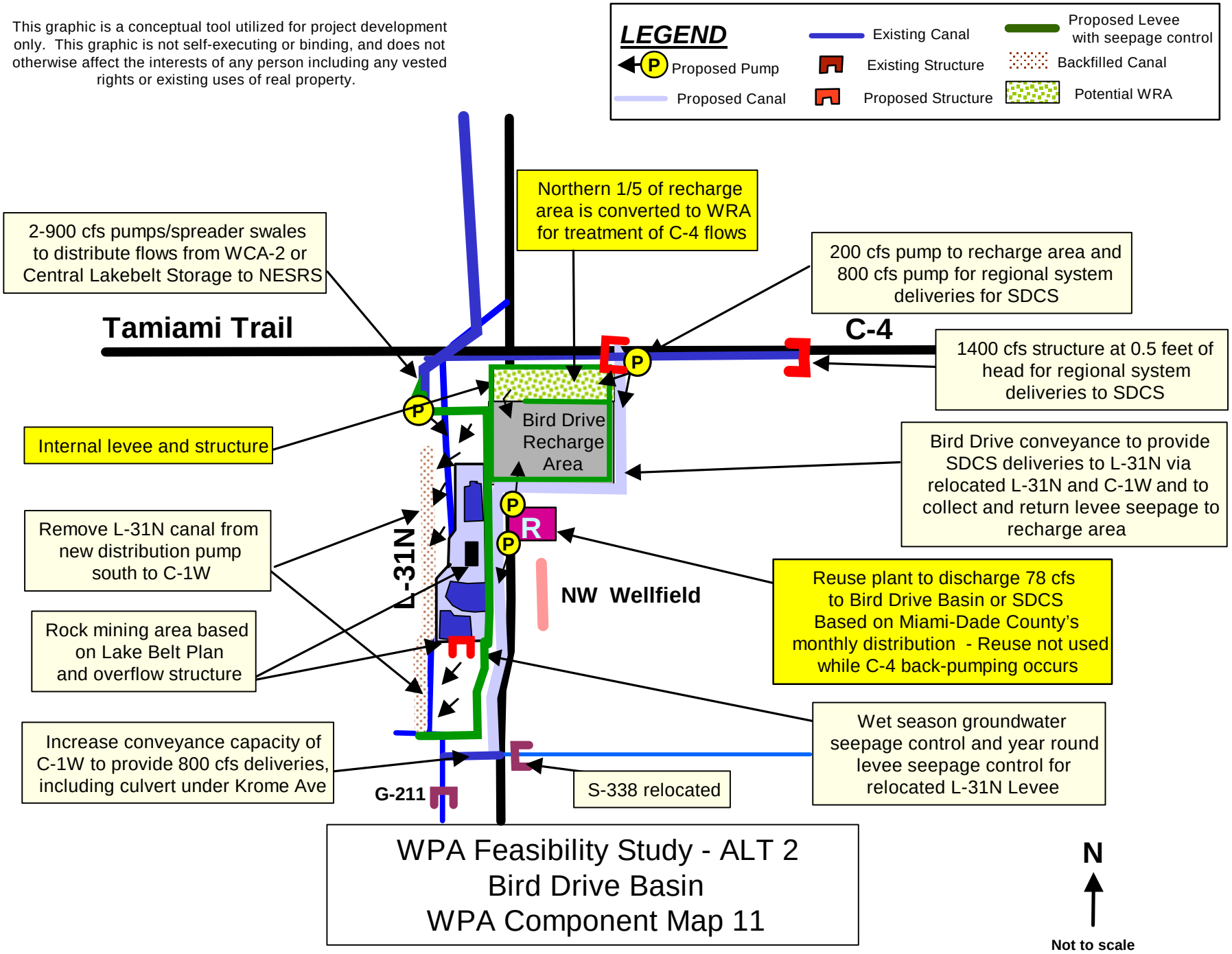
Counties: Miami-Dade

Summary of modifications from Alternative 1: Inflows from the C-4 basin are routed through the WRA. A 485-acre Water Redistribution Area is added. Inflows from WDWTP are changed.

Assumptions and related considerations:

1) Treatment facility is needed if seepage collected does not meet Everglades standards.
2) Telemetry systems are required for all operable structures and pump stations.
3) Flood protection in the basin is not removed by the introduction of the West Dade Wastewater Treatment Plant inflows.
4) Regional-scale simulation using SFWMM 2mile X 2mile resolution is rather coarse for this local-scale feature. Specific land elevations in the Bird Drive Recharge Area are not precisely mimicked due to location and scale considerations in the SFWMM.

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.



Component BB

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Dade Broward Levee / Pennsuco Wetlands - SEE WPA COMPONENT MAP 10

Purpose: Reduce seepage to the east from the Pennsuco wetlands and southern Water Conservation Area (WCA) 3B and enhance hydroperiods in the Pennsuco. Also, an improved Dade Broward Levee enhances recharge to Miami-Dade County's Northwest Wellfield.

Operation: Improvements to the Dade-Broward Levee and associated conveyance system reduce seepage losses to the east and provide recharge to Miami-Dade County's Northwest Wellfield. Seepage reduction enhances hydroperiods in Pennsuco wetlands and hold stages higher along southeastern WCA 3B. Recharging the conveyance features of the Dade-Broward levee from the regional system deliveries provides recharge to Miami-Dade County's Northwest Wellfield. Treatment areas are provided to meet all water quality standards required, if necessary.

Design:

1) Improve the Dade-Broward Levee: Construct or improve the existing levee to a five-foot height with a ten-foot top width and the east borrow canal with 14 feet depth, 110 foot bottom width, 1 to 1 (vertical to horizontal) side slopes, and improve existing conveyance to 1400 cfs or greater.
2) 600 cfs divide structure in the C-6 Canal for regional system deliveries to C-6, C-7, C-4, and C-2 Canals and the South Dade Conveyance System. This structure can control C-6 Canal water levels so that deliveries are able to be directed to the Dade-Broward levee borrow canal, the Central Lake Belt Storage Area or are released to the canals above.
3) 1400 cfs bypass structure and proposed canal from the C-6 Canal to the Dade-Broward Levee senda Lake Okeechobee deliveries south to provide recharge from the regional system via the improved US Highway 27 west borrow canal.
4) 1400 cfs gravity structure in the Dade-Broward Levee borrow canal to be located south of the southern end of the Northwest Wellfield. Deliveries are made to maintain elevation 5 feet NGVD at this structure when the conveyance canal is below elevation 5.0 feet NGVD.
5) 800 cfs gated culvert directs deliveries (300 cfs) south from L-30 to the NW Wellfield Protection Canal via the existing Dade-Broward Levee borrow canal and allows discharge from the CLBSA north to the L-30 Canal for deliveries to North East Shark River Slough.

Location: Dade-Broward Levee, Pennsuco Wetlands, WCA-3B, the Central Lake Belt Storage Area and Miami-Dade County's Northwest Wellfield.

Counties: Miami-Dade

Summary of modifications from Alternative 1: No changes from Alternative 1

Assumptions and related considerations:

1) Wellfield protection must be maintain through recharge of acceptable water quality.
2) Secondary structures within the recharge canals may be needed to provide seepage reduction and wellfield recharge desired.
3) The stage maintained in the Dade-Broward Levee conveyance canal is subject to change.

Component EEE

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Flows to Eastern Water Conservation Area (WCA) 3B from Central Lake Belt Storage Area – SEE WPA COMPONENT MAPS 6 and 10

Purpose: Captured excess surface water and seepage from Water Conservation Area 2B, 3A and 3B in Central Lake Belt Storage Area (CLBSA) are delivered to eastern WCA 3B during dryouts.

Operation: Deliveries are made to maintain 6 inch depths in WCA 3B if NSM hydroperiod indicate WCA 3B water levels are at or above 6 inches and water is available in CLBSA. Deliveries from CLBSA occur through a wetland treatment cell and the L-30 borrow canal to a spreader swale system in the eastern areas of WCA 3B.

Design: 500 cfs pump from L-30 to eastern portion of WCA 3B.
Spreader Swale along eastern WCA 3B to convert 500 cfs to sheetflow
Upgrade of 1500 cfs from CLBSA deliveries NESRS to 2000 cfs to accommodate additional flows to WCA 3B (SEE COMPONENT S5)

Location: The discharge point from L-30 borrow canal to WCA 3B is at the bend in the canal and is approximately 4.5 miles south of the intersection of the L-30 and the C-6 Canal.

Counties: Miami-Dade

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:
1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump stations.